WATER QUALITY TEAM MEETING NOTES

January 8, 2002
National Marine Fisheries Service Offices
Portland, Oregon

Introductions and Review of the Agenda.

Mark Schneider of NMFS, WQT co-chair, welcomed everyone to the meeting, held January 8 at the National Marine Fisheries Service offices in Portland, Oregon. The meeting was facilitated by Richard Forester. The meeting agenda and a list of attendees are attached as Enclosures A and B. Please note that some of the enclosures referenced in these meeting notes may be too lengthy to routinely attach to the minutes; please contact Kathy Ceballos (503/230-5420) to obtain copies.

2. Informational Briefing: Perspectives in Water Quality and Salmon Health.

Schneider explained that he had invited Nat Scholz from the NMFS Fisheries Science Center in Seattle to today's meeting, to brief the WQT about a topic the group hasn't really addressed to date: the effects of pollutants on salmon health. My intention for upcoming WQT meetings is to schedule a series of presentations on the biological ramifications of water quality, Schneider said, in particular, the effects of chemical contamination.

Scholz said the intent of his presentation was to capture some of the conceptual questions the NMFS Science Center is addressing in this area. He said his presentation would provide NMFS's perspective on water quality: where we are now, where we need to be, and what research needs to happen in the area of the biological effects of water quality, from an ecotoxicological standpoint. Scholz noted that the focus of his research group is specifically on fish health; there are certainly other biological impacts caused by exoctoxicology, in such areas as aquatic insect and invertebrate populations.

Scholz went through the following major points, using a series of overheads:

- The main classes of chemical contaminants NMFS believes may be impacting salmonid health, primarily current-use pesticides
- The background of the ecotoxiciology work group at the NMFS Science Center Public concerns about the possible biological consequences of pesticide pollution
- The point at which water pollution harms threatened or endangered salmonids

Sublethal endpoints of concern for migratory salmonids (early development, prey capture/growth, predator avoidance, endocrine function, nervous system function, immune system function/disease resistance, migratory/orientation behavior, reproductive physiology and spawning behavior)

- Baseline inventories of basin-by-basin water quality in the Northwest (most of which were developed in the early 1990s)
- The fact that existing EPA Aquatic Life Criteria and the Clean Water Act are of little or no use in this effort, because they are not intended to address the sublethal effects of the thousands of agricultural pesticides on listed salmonids.
- Some of the specific pesticides detected by the USGS in the central Columbia plateau, Puget Sound and Yakima basins.
- Problem 1a: "We need a lot of new data that..." specifically evaluate the chemicals that have been detected in salmon habitat, focus on life-history stages that are likely to be most vulnerable to the impacts of contaminant exposures, focus on biological responses or endpoints that are particularly sensitive and reproducible, etc.
- The potential use of salmon embryos to assess the impacts of environmental chemical exposure, and some of the challenges associated with this approach
- The advantages of using zebrafish, rather than salmonid embryos, to address the impacts of environmental chemical exposure on development – for one thing, zebrafish hatch and begin to swim within 48 hours; for another, zebrafish reproduce year-'round, rather than seasonally. Also, zebrafish embryos are transparent, rather than opaque. In addition, by later this year, the zebrafish genomic sequence will be completely mapped. There are also precise and detailed maps of normal zebrafish development.
- Problem #2: The "So What" Factor: So what if you can measure a sublethal physiological or behavioral impact to an animal under laboratory conditions? How can biological measurements below the scale of the individual fish be related to biological responses at the scale of natural populations? How do we connect the dots between fish health and the number of animals studied?
- The effects of pesticides on the salmon olfactory nervous system, given the fact that most insecticides are neurotoxins
- Why the study of the salmon nose can be used as a screen for sublethal neurotoxicity
- The specific experimental tasks Scholz's group is undertaking: Task 1: Direct *in vivo* measures of pesticide neurotoxicity in the chinook olfactory system; Task 2: Quantifying the effects of pesticides on salmon survival and reproductive success; Task 3: Modeling the impacts of pesticides on natural populations in the Yakima subbasin.

The group asked a few clarifying questions, touching on issues such as bioaccumulation of these substances and potential public health hazards. With that, the presentation was concluded. In the course of his discussion, Scholz referenced the work of the Washington Pesticide Task Force in identifying and proscribing pesticides of particular concern; Schneider suggested that it may be helpful for the WQT to

schedule a presentation from the WPTF at one of its upcoming meetings, given the fact that the BiOp includes related activities such as, Reasonable and Prudent Alternative Action #39, Columbia Basin Project Wasteway Water Quality.

Scholz asked anyone who wants a copy of his overheads to contact him directly.

3. Briefing on Corps 2002 Water Management Plan.

Scott Boyd led this briefing; he distributed copies of the most recent draft of the 2002 Water Management Plan, as well as an executive summary of this document. Boyd noted that he has already made this presentation to the Technical Management Team.

Boyd touched on the purpose of the Water Management Plan, the differences between this plan and the plans produced in years past (in particular, the timing of its delivery – the BiOp now specifies that the Water Management Plan be finalized by September.) The main problem, of course, is that in September, you know little or nothing about what the water supply for the upcoming year is going to be, Boyd said. The way we'll get around that problem, he said, is by issuing two updates – one in the winter, and one in the early spring.

We would like any comments the WQT might have on the draft 2002 Water Management Plan prior to the January 23 TMT meeting, Boyd said. He noted that the Corps is shortening the comment period somewhat to help get closer to the original schedule for this effort; Boyd added, however, that there will be a further opportunity to provide comments when the two WMP updates are issued.

Boyd then spent a few minutes going through some of the specific items addressed in the 2002 WMP, including:

Libby spillway test
Libby water temperature monitoring
Libby VARQ
Libby storage diagram and forecast procedure
Water quality plan development
TDG monitoring plans
TDG monitoring review
TDG modeling
Temperature modeling and monitoring needs
The water quality database
Canadian storage for flow augmentation
Albeni Falls coordination
Public coordination

Boyd noted that copies of the full text of the 2002 Water Management Plan are

available via the following website: http://www.nwd-wc.usace.army.mil/TMT/2001/documents/wmp11-7-01.pdf.

Schneider observed that the WQT's annual duties, as laid out in the BiOp, include a thorough review of the annual Water Management Plan. The Corps would welcome such a review, Boyd replied, adding that Dick Cassidy would be the best person with whom to coordinate such a review.

The group devoted a few minutes of discussion to some of the concerns the WQT has about the Corps' approach to the development of the 2002 WMP; Schneider noted that he is particularly concerned about the adequacy of the water quality monitoring program the Corps is proposing. At the close of this exercise, Schneider reiterated that comments to the Corps are due by January 23; he asked that any WQT member comments be submitted to him for collation and coordination by Friday, January 18. It was so agreed.

4. Briefing on Action Agencies' Water Quality Plan.

BPA's Ken Barnhardt distributed copies of his presentation, titled "2002 1-Year Implementation Plan for the Federal Columbia River Power System," noting that, prior to today's meeting, Schneider had mailed out one of the key tables from the Plan, showing the specific water quality actions to avoid jeopardy contained in the 1-year implementation plan, to the WQT membership. Barnhardt briefly described the Action Agencies' implementation planning framework, then spent a few minutes going through his handout, touching on the following major areas:

- The purpose of the 2002 1-year implementation plan
- The relationship between the 2002 1-year implementation plan and other regional plans
- The 1-year implementation plan structure
- The 1-year implementation plan's hydrosystem priorities – CRFM, operation and maintenance of fish passage, water quality
- 2002 water management priorities – reservoir operations, system flow management, spill operations, juvenile fish transport
- 2002 habitat priorities
- 2002 hatchery priorities
- 2002 harvest priorities
- 2002 research, monitoring and evaluation priorities
- 2002 resident fish priorities
- Priority-setting among actions
- A table showing the 2002 annual implementation plan's water quality actions to avoid jeopardy.
- A memo from Barnhardt to Schneider explaining what the table is and how it was developed.

Barnhardt noted that the full text of both the 1-year and the 5-year implementation plans are available via the www.salmonrecovery.gov website.

Margaret Filardo asked whether the action agencies are still planning to produce a 2002 Water Quality Plan; Barnhardt assured her that they are. The group devoted a few minutes of discussion to the somewhat hazy distinctions between the two water quality plans that will eventually be produced by the action agencies. Chris Maynard said that, in his view, both the BiOp water quality plan and the broader water quality plan should at least reference the appropriate water quality standards.

5. Other.

A. ODEQ Update. Russell Harding said ODEQ has now received the spill requests from the Fish and Wildlife Service (for Spring Creek Hatchery support spill in March) and from the Corps of Engineers for the 2002 BiOp spill program. Both waiver requests will be processed in the usual way. He added that ODEQ's draft TDG TMDL will be publically released next week; that release will be followed by a series of public meetings and a 45-day public comment period. Once those comments are incorporated, he said, the TMDL will be submitted to EPA. Harding added that the draft water temperature TMDL should be available by early May; its release will be followed by a 90-day public comment period.

5. Next WQT Meeting Date.

The next meeting of the Water Quality Team was set for Tuesday, February 12 (later changed to February 19). Meeting notes prepared by Jeff Kuechle, BPA contractor.